

## **Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.



1.9  
R53F

UNITED STATES DEPARTMENT OF AGRICULTURE  
OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING  
Washington, D. C.

FIELD LETTER NO. 28.

June 15, 1917.

Logan Waller Page, Director.

P. St. J. Wilson, Chief Engineer; J. E. Pennybacker, Chief of Management; Samuel Fortier, Chief, Irrigation Investigations; S. H. McCrory, Chief, Drainage Investigations; E. E. McCormick, Chief, Rural Engineering; Prevost Hubbard, Chief, Tests.

THE LIBERTY LOAN.

Forty-nine persons in this Office subscribed \$8,750 to the first Liberty Loan. While much, it is little. All of us must look forward to the call for the second loan almost before payments on the first will be completed. We must be ready to give. And we must be ready to give freely. The second loan must be over-subscribed even more than was the first. Our brothers and our sons are going into the trenches. They give up their homes, their business -- all that they have in a material sense. They give their blood, thousands of them, freely will offer their lives. We who stay at home have nothing to give but dollars. Let us give them when the call comes. And every time the call comes.

FEDERAL AID.

Laws enacted during the recent sessions of state legislatures to meet the requirements of the Federal Aid Road Act have been considered by the Department and found satisfactory in the following states: Colorado, Connecticut, Idaho, Michigan, Minnesota, Nebraska, Nevada, Ohio, Oklahoma, Rhode Island, and Tennessee.

The State Highway Engineer of Wyoming has made inquiry as to how long Federal funds apportioned to the State will remain to the credit of and be available to the State. Wyoming did not have a highway department at the time the apportionments were made for the fiscal years 1917 and 1918. This raised a question that applied to all States that had no highway department at the time apportionments were made. On May 19 a memorandum opinion was received from the Acting Solicitor in which it was held that the apportionments to the State of Wyoming for the fiscal years 1917 and 1918 were made July 21, 1916 and January 11, 1917, respectively, and that at the time these apportionments were made the State did not have a highway department within the meaning of the Act. Accordingly, it was held that the apportionments for the fiscal years 1917 and 1918 will be available for expenditure within that State until the end of the third fiscal year succeeding the fiscal year for which each apportionment was made.



Project agreements covering North Carolina project, Charlotte-Asheville and National Highway (bridge), and Washington project, the Olympia-Tacoma section of the Pacific Highway have been prepared and approved by the Solicitor and sent to the respective highway departments for execution.

The Secretary has approved Maine project No. 1, locally known as "Post Road", between Brunswick and Gardiner, and New Hampshire project No. 1, known as the Lafayette Road, Rockingham County. The Secretary also approved Connecticut Project No. 1, known locally as the New Haven-Cheshire Road, and Rhode Island Project No. 1, known as "Post Road", Washington County.

At the close of the month three projects for Minnesota and one for Virginia were in the hands of the Secretary for consideration.

Maryland project statement No. 1, including plans and specifications, has been submitted to the Chief Engineer with recommendation for approval.

North Carolina Project No. 1 was advertised, bids received and contract let to C. W. Requarth & Company.

Ohio project statements 1 and 2 and Virginia project statement 1 were forwarded to the District Engineer with recommendations for approval. Project statement No. 3 from the former State is being held in the district office for further rural route information.

Pennsylvania projects 1, 2 and 3 were advertised, and copies of bids for projects 2 and 3 received. The bids were much higher than the estimates, and therefore were rejected by the State Highway Department. The work will be re-advertised.

Two project statements were received by the Chief Engineer from District 7 -- one each from Kentucky and Michigan.

Three project statements were submitted by the State of Washington to District Engineer Hewes during the month.

Arkansas project statement No. 1 was received at the District office at Fort Worth.

After conferring with the Governor of Texas regarding trunk line highways for that State, District Engineer Fauntleroy aided State Representative Tillotson in mapping out a tentative system in accordance with the Governor's ideas. Mr. Fauntleroy, with the Oklahoma State Highway Engineer, also made an automobile inspection of the Jefferson Highway from the Kansas line to the Red River. It is understood that practically all of the Federal aid appropriations for 1917 and 1918 will be asked for improving different sections of this highway.





District Engineer Bullen spent several days at the Washington Office going over details of rural free delivery routes of Georgia Federal aid projects and checking proposed State highway specifications.

Inspections and reports of proposed Federal aid projects in Clay, Barbour, Jefferson, Walker, Tuscaloosa and Sumpter Counties, Alabama, were made by Senior Highway Engineer Crossland.

Highway Engineer Rhodes attended a conference of the Georgia Highway Commission at Atlanta, and made a further inspection of Georgia project No. 1.

Mr. Bullen reports that Alabama is about ready to submit a 5-year program map and turn over to the district office five project statements. He also says that the Florida Legislature has enacted several laws desired by the State Highway Department, and that Mississippi expects to submit seven projects in the near future.

Final inspection of California project No. 3 in Contra Costa County was made on May 11.

In District 4, inspections were made in 11 counties of Minnesota by the District Engineer and Senior Highway Engineer Scales. Mr. Hathaway also made a trip through a number of counties in the southern part of that State with the Highway Commissioner, Deputy Commissioner and one of the Division Engineers. The eight project statements thus far submitted from this State represent a proposed expenditure of \$575,200.

District Engineer Hathaway consulted with the North Dakota Highway Commission at Bismarck for the purpose of instructing and assisting the members in the preparation of project statements and the proper considerations in the selection of roads to be improved.

Mr. Miller, in District 9, inspected projects in Rhode Island, New Hampshire and Vermont, and attended numerous conferences with State highway officials in his district.

District Engineer Wonders reports that large delegations representing all sections of the State were in attendance at a meeting of the Kansas Highway Commission at Topeka May 8-11, the purpose of which was to hear claims of the different delegations urging road improvement in their respective localities.

District Engineer Whittaker consulted with representatives of the State Highway Department and the county officials at Laramie, Wyoming, regarding projects and proposed work. The Wyoming Highway Department has designated a system of State highways, and plans for it are being prepared.

In addition to his other duties, District Engineer Bishop accompanied Major Williams of the Marine Corps to look over the road situation for the marine camp at Quantico, Virginia. He also attended the meeting of a committee of the American Society of Civil Engineers in New York.

[illegible]



### Forest Roads.

Proposed projects in the Florida and Tennessee National Forests were checked, the report on the project in the Florida National Forest was made and a preliminary investigation was made for a proposed forest project in White Top Forest in Sullivan and Johnson Counties, Tennessee.

Reconnaissance work in the Ozark National Forest was continued by Highway Engineer Craig.

Reconnaissances of the Tiller-Trail National Forest Road in Douglas and Jackson Counties, Oregon, the Prineville-Mitchell National Forest Road in Crook and Wheeler Counties, Oregon, the Eugene-Flörence National Forest Road in Lane County, Oregon, the South Fork-Payette National Forest Road in Idaho, and the Republic-Wauconda National Forest Road in Washington engaged practically the entire time of the force in District No. 1.

In District No. 2, Senior Highway Engineer Lynch made an inspection of the Clifton-Springerville Road on which a location survey is being made, and reports that Greenlee County, Arizona, has passed a bond issue providing the money to cover its share of the cost of the project.

Highway Engineer Morris held conferences with the Supervisors and County Surveyor of Fresno County, California, as to raising cooperative funds for the Huntington Creek Road in the Sierra Forest.

Superintendent of Road construction MacBeath, temporarily succeeded Highway Engineer Powell in the handling of the forest road work in Arizona and New Mexico on May 15, at which time Mr. Powell reported for military service at the San Francisco training camp. It is reported that Mr. Powell has received his commission as Captain in the Engineer Officers Reserve Corps.

Senior Highway Engineer Scales was prevented from making a preliminary investigation of a proposed road in the Superior National Forest in Cook County, Minnesota, by forest fires cutting off land transportation and by ice obstructing navigation. It is planned to make this investigation as soon as conditions will permit.

The Secretary has approved the project agreement for the location survey and plans of the Wind River Project in District 3. This road extends from Lander to Jackson Hole, Wyoming, and is about 75 miles long, plus 65 miles through the Shoshone Indian Reservation not included.

### CONSTRUCTION.

#### Obiect-Lesson Roads.

F. A. Davis, J. H. E., was assigned on May 11 to relieve R. H. Harrison, J. H. E. in Albermarle County, Virginia. Mr. Harrison is now in training at the Engineer Officers' Reserve Corps camp at Arlington, Virginia.

Proposed projects in the Florida and Tennessee National Forests were checked, the report on the project in the Florida National Forest was made and a preliminary investigation was made for a proposed forest project in White Top Forest in Sullivan and Johnson Counties, Tennessee.

Proposed projects in the Florida and Tennessee National Forests were checked, the report on the project in the Florida National Forest was made and a preliminary investigation was made for a proposed forest project in White Top Forest in Sullivan and Johnson Counties, Tennessee.

Reconnaissance work in the Ozark National Forest was continued. Highway Engineer Craig.

Reconnaissance of the Tillamook-National National Forest in Oregon, and Jackson County, Oregon, the Prineville-National National Forest in Oregon, and Wheeler County, Oregon, the Eugene-Florence National Forest in Oregon, the South Fork-Payette National Forest in Oregon, the Republic-Warrens National Forest in Idaho, and the Republic-Warrens National Forest in Idaho, was made. The entire time of the force in District No. 1.

In District No. 2, Senior Highway Engineer L. H. Smith made a reconnaissance of the Clifton-Springville Road on which a location survey was made. He reports that Greenlee County, Arizona, has passed a bond law providing the money to cover the share of the cost of the project.

Highway Engineer Morris held conferences with the State Highway Surveyor of Fresno County, California, and the State Highway Surveyor of the Hamilton Creek Road in the Sierra Nevada.

Superintendent of Road Construction Mr. H. H. Smith, and Highway Engineer Powell, in the matter of the construction of a road from New Mexico to the border of the United States. Mr. Powell has received his commission as Captain in the United States Army.

Senior Highway Engineer L. H. Smith made a reconnaissance of the Clifton-Springville Road on which a location survey was made. He reports that Greenlee County, Arizona, has passed a bond law providing the money to cover the share of the cost of the project.

C. T. Harrison, S. R. C., was engaged throughout the entire month in superintending the construction of a macadam road in Hughes County, Oklahoma.

#### Experimental Roads.

B. F. Heidel, S. H. E., and J. T. Pauls, J. H. E., spent 4 days each in completing the survey and preparation of plans for experimental construction proposed to be done during the coming fiscal year on the Columbia Pike in Alexandria and Fairfax Counties, Virginia.

#### Post Roads.

A. L. Hooper, J. H. E., reported at the Engineer Officers' Reserve Corps camp at Arlington on May 14. H. H. Lotter, S. H. E., is now in charge of supervising the construction of the Iowa Post Road.

#### County Road Systems.

B. H. Burrell, S. H. E., made inspections and prepared reports for county road systems in Lubbock and Floyd Counties, Texas.

H. K. Craig, H. E., filled a county road system assignment in Nolan County, Texas.

### ECONOMIC AND MILITARY SURVEY OF HIGHWAYS

A highway survey of the State of Maryland is now being conducted in cooperation with the State Roads Commission for the purpose of showing highways, bridges, culverts, types of construction, condition, location of road materials, load capacity of bridges, traffic importance of highways, and other information of value from both military and economic standpoints.

#### Change in Personnel in Economics Division.

On May 23, Mr. J. L. Harrison was appointed to the position of highway engineer in this Office. Temporarily Mr. Harrison is assigned to work on the Management Bulletin in the Division of Road Economics.

### TESTS & RESEARCH.

#### Projects.

#### Administration.

A. M. Ergood was promoted from the position of student assistant to laboratory apprentice and in that capacity will continue to assist Mr. Goldbeck in concrete and soil pressure investigations. The personnel of the division was increased June 1 by the appointment of C. W. Mittman

[illegible]

Dr. John H. Thompson and his family are now residing at 100 N. E. 1st St., Minneapolis, Minn.

At present, the only way to get a copy of the report is to contact the author, who is a private citizen and not an official of the government.

A highway survey of the State of Maryland is now being conducted in cooperation with the State Roads Commission for the purpose of determining the types of construction, existing conditions, and other information of value from both military and civilian viewpoints.

[illegible]

**Abstract**



as assistant in mineral technology, and J. M. Cobb as student assistant. Mr. Mattman will work in cooperation with Mr. Jackson in the study of quarry practice throughout the United States. Mr. Cobb has been assigned to assist Mr. Goldbeck in concrete and soil pressure investigations.

#### Routine Tests & Analyses.

Seventeen samples, the majority of which were bituminous materials, were examined in the Chemical Laboratory in May; 51 samples of rock, sand, gravel, etc., were examined in the Physical Laboratory; and 46 samples were examined and inspected in the Microscopic Laboratory.

#### Research upon the Properties of Dust Preventives and Road Binders.

Work has been confined largely to obtaining supplementary data on certain preliminary investigations the results of which have been prepared for publication. This includes viscosity temperature curves for various types of bituminous materials as determined by means of the new consistency tester devised in this office. Work has been continued upon the determination of thickness of bituminous films upon various types of mineral aggregates which work to some extent supplements the research on the toughness test of bituminous aggregates.

#### Non-bituminous Road Material Investigations.

Additional data was collected upon the effect of controllable variables upon the toughness test of rock supplementing that which has been prepared for presentation at the coming meeting of the American Society for Testing Materials. These results emphasize most strongly conclusions previously drawn relative to wide variations in the quality of rock taken from different portions of the same quarry.

In the study of the abrasion test for rock a standard abrasion cylinder has been modified to some extent by milling a number of 1/16 inch slots in the side so that the fine abraded material will be removed as fast as it is formed thereby eliminating the effect of a dust cushion. It is planned to run a series of tests showing the relative loss of different types of rock by this method as compared with the standard method. For some time past it has been felt that the dust cushion produced in tests of inferior rock has protected the rock from further abrasion, to a large extent, and developed a percentage of wear hardly comparable with that obtained from better grades of rock.

Possible modification of the hardness test has been studied and a number of tests have been made to determine the relative effect of different sized abrasives. The results so far obtained indicate that quartz sand passing the standard 20 mesh sieve and retained on the 30 mesh is much more effective in producing the abrasion than that passing the 30 mesh and retained on the 40 mesh sieve which is ordinarily used. In fact the loss with the former size is almost twice that obtained with

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (CG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG). The subjects were divided into two groups: the control group (CG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG).

SECRET

[illegible]

Capital flows : direct and investment

[illegible]



the latter. A number of tests have been made in an effort to develop some method for determining the normal consistency of sand Portland cement mortars. The most promising method at present appears to be to measure resistance to change of shape under impact of a mortar specimen made up in the Vicat mould. This is done by dropping a weight upon the moulded specimen and measuring the amount of flattening by means of the Vicat Needle.

#### Concrete Investigations.

Preparations have been made for pouring a large reinforced concrete bridge slab to be tested under conditions as nearly as possible like those obtaining on an actual structure.

Where measurements have been made on the reinforced concrete road at Chevy Chase a series of tests have been started to determine the modulus of rupture of concrete containing various coarse aggregates.

#### Soil Pressure Investigations.

Lateral soil pressure measurements have been progressing and a series of tests have been made to determine the horizontal pressures developed back of retaining walls. A series of curves have been obtained showing the effect of concentrated loads in producing horizontal pressures against a wall. Active steps have been taken to carry out the experimental pressure work in cooperation with the Miami Conservancy District as outlined in the last field letter. It is expected that these tests will be under way within a few weeks.

#### IRRIGATION INVESTIGATIONS.

Dr. Fortier left Washington May 9 for an inspection trip through the Southwest. He held a conference on drainage of irrigated lands in Denver. The men in attendance were: V. M. Cone, I. E., R. A. Hart, S. D. E., W. A. Kelly, D. E., and L. T. Jessup, J. D. E. After this conference, Dr. Fortier spent the balance of the month in Texas with Mr. Rockwell, inspecting the work in the Panhandle, the lower Rio Grande valley, and near El Paso.

W. L. Rockwell, I. E., has prepared and submitted to the Washington office a report on the present condition of the irrigation enterprises in the lower Rio Grande valley, Texas.

#### Pumping for Irrigation.

Leroy Rhodes, Cooperative Agent, has submitted a report on the pumping plants in the vicinity of Plainview, Texas, based on work done in the summer of 1916.

... A number of ... made in an effort to ... for determining ... of sand ... The most ... of a water ... of change of ... weight upon the ... of the ...

## Q-1. Measurements

... measurements ... large ... these ... on an ...

... measurements have been made on the reinforced concrete ... of ... various concrete aggregates.

## Q-2. Pressure Measurements

... pressure measurements have been progressing and a ... of tests have been made to determine the horizontal pressure ... back of retaining walls. A series of curves have been obtained showing the effect of concentrated loads in producing horizontal pressure against a wall. Active steps have been taken to carry out the experimental pressure work in cooperation with the Miami Conservancy District as outlined in the last field letter. It is expected that these tests will be under way within a few weeks.

## IRIGATION INVESTIGATIONS

Dr. Forster left Washington May 9 for an inspection trip through the Southwest. He held a conference on drainage of irrigated lands in ... were: V. B. Cook, I. E. ... D. E. ... and I. E. ... the ... of the ... the ...

... I. E. ... has prepared and submitted to the ... of the ...

## Progress for Irrigation

... report on the ... of ...

### Use of Water.

A report of cooperative work on irrigation of rice in Sacramento Valley, California, prepared by R. D. Robertson, I. E., has been published by the University of California.

A report of cooperative investigations of irrigation of alfalfa in Sacramento Valley, California, prepared by S. H. Beckett, I. E., and R. D. Robertson, I. E., has been published by the University of California.

Frank Adams, I. E., and his assistants have prepared for the California State Council of Defense, a report on the irrigation resources of California, showing irrigable lands not now cultivated that are available for immediate use.

### Measurement of Water.

V. M. Cone, I. E., and R. L. Parshall, A. I. E., have made a series of tests on the Cronholm measuring turnout, and have filed a copy of the results with the Washington office.

The Colorado Agricultural Experiment Station has published as bulletin 228, a report on Divisors for the Measurement of Irrigation Water, prepared by V. M. Cone, I. E., as a part of the cooperative work at the Fort Collins laboratory.

E. J. Hoff, mechanic, made a trip to Denver and Fort Collins for the purpose of testing some new types of current meters, and discussing measuring devices with the men at the Fort Collins laboratory.

### Drainage of Irrigated Lands.

An agreement has been entered into between the office and the judge of the fifth judicial district of Wyoming, under which W. A. Kelly, D. E., will spend the summer of 1917 in the Big Horn Basin, Wyoming, acting in an advisory capacity for several drainage districts comprising an area of about 200,000 acres.

A cooperative agreement has been entered into between this office, the state engineer of Nevada and the extension division of the University of Nevada, under which final surveys and plans are to be made for the drainage of Truckee Meadows, in Nevada. R. A. Hart, S. D. E., will supervise this work, and F. L. Bixby, I. E., will have charge locally.

L. T. Jessup, J. D. E., has completed the installation of drains at Palisades, Colorado and has gone to the Yakima Valley, Washington.





## DRAINAGE INVESTIGATIONS.

### Administration.

On May 17-18 S. H. McCrory, in company with the officials of the Back & Jacob Swamp Drainage District, N. C., inspected the maintenance work recently completed on that project under the direction of H. M. Lynde and Guy L. Smith. On June 2 Mr. McCrory left on a trip of inspection through the Mississippi Valley. At Algona, Iowa, he met D. G. Miller to arrange with him for conducting ditch maintenance investigations on completed drainage ditches in various districts in Iowa. At Missouri Valley, Iowa, he conferred with C. E. Ramser regarding run-off investigations in western Iowa. At Hampton, Iowa he met D. L. Yarnell and Chas. Levy to discuss the work, flow in tile drains, they have been doing in Iowa during the past two months. At Burdette, Ark., he inspected the maintenance work being conducted by O. G. Baxter on ditches in Drainage District No. 9, Mississippi County. At Jackson, Tenn., he inspected the work on run-off being carried on by A. L. Lane under the direction of Mr. Ramser.

Dan S. Helmick has been granted a furlough to enter the training camp of the Officers' Reserve Corps at Ft. Sheridan, Illinois.

Howard E. Middleton recently appointed Junior Drainage Engineer reported to O. G. Baxter at Burdette, Ark., June 1.

An examination for Junior Drainage Engineer has been announced by the Civil Service Commission to be held July 11.

### Farm Drainage.

On May 22, W. N. Hall returned to the Washington office after making a number of farm surveys in West Virginia and Maryland. On June 10 he again left the office to make additional surveys in those states.

Geo. R. Boyd made farm surveys in Maryland and Virginia.

John R. Haswell returned to the Washington office June 4. Since the last letter he was engaged in making a property survey of a tract of land at Middlebury, Vermont, to be purchased by the Bureau of Animal Industry to add to the Morgan Horse Farm. He also made surveys for the installation of additional tile drains on that farm.

D. L. Yarnell and Chas. Levy continued field investigations in Iowa. On June 11, Mr. Levy returned to Washington to take up the experimental work at the Arlington Farm. Mr. Yarnell will continue in the field.

S. W. Frescoln and F. G. Eason devoted much of the past month to making studies of the effect of tile drains on the elevation of the water table at various places in South Carolina.





The following cost data on the construction of the tile drainage system on the Staunton Experiment Farm, Virginia, which was designed by J. R. Haswell, has been submitted by W. N. Hall who supervised construction.

2600 feet 4-inch tile at \$20 per M. ....	\$52.00
150 " 5 " " " 25 " ".....	3.75
Freight on tile, Basic City, Va. to Staunton, Va. ....	8.33
Hauling tile, 8.4 tons 2 miles.....	12.50
Headwall.....	5.00
Trenching and Laying Tile	
248.5 hrs. at 15¢ \$ 42.68	
30 " " 17.5¢ 5.25	
30 " " 20¢ 6.00	
47.5 " " 35¢ 16.62.....	70.55
Backfilling.....	1.35
Total.....	\$153.48

Number of acres benefited 5.  
Cost per acre \$30.70.

Occasional reefs of rock, marl and limestone were encountered in the trenches at varying depths. The above cost does not include engineering nor charge for tools. The cost reported was only 40¢ in excess of that estimated by Mr. Haswell.

#### Reports transmitted:

Seventeen reports were made on farm projects by Messrs. Jones, Grable, Hall, Hart, Baker, Lynde, Boyd and Eason.

#### Swamp Land.

A report by S. W. Frescoln on the Dabbs-McBride Tracts, S. C., has been submitted to the interested landowners.

#### Reports received:

Back Swamp, Florence Co., S. C., by F. G. Eason.

#### Cost, Operation and Maintenance.

H. M. Lynde was at the Washington office May 21-22 when arrangements were made for conducting maintenance investigations of drainage ditches in Washington County Drainage District No. 4, and Third Creek and Fourth Creek Drainage Districts, Iredell County, N. C. Since these arrangements were made Mr. Lynde has undergone an operation at a Raleigh hospital, so F. R. Baker has been assigned to the work in Washington County and Guy L. Smith to that in Iredell County.

[illegible]

.2 million acres to reduce  
.07.02% crop red loss

[illegible]

## Polynomial

Seventeen reports were made on farm projects by Messrs. J. H. Hart, H. L. Hart, Baker, Lynde, Boyd and Brown.

51421 *gymnoides*

is reported by G. W. Prescott of the Lappa-McBride Trust, St. Louis, Mo. It is considered to be interesting and unusual.

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿ 一 二 三 四 五 六 七 八 九 十 十一 十二 十三 十四 十五 十六 十七 十八 十九 二十 二十一 二十二 二十三 二十四 二十五 二十六 二十七 二十八 二十九 三十 三十一 三十二 三十三 三十四 三十五 三十六 三十七 三十八 三十九 四十 四十一 四十二 四十三 四十四 四十五 四十六 四十七 四十八 四十九 五十 五十一 五十二 五十三 五十四 五十五 五十六 五十七 五十八 五十九 六十 六十一 六十二 六十三 六十四 六十五 六十六 六十七 六十八 六十九 七十 七十一 七十二 七十三 七十四 七十五 七十六 七十七 七十八 七十九 八十 八十一 八十二 八十三 八十四 八十五 八十六 八十七 八十八 八十九 九十 九十一 九十二 九十三 九十四 九十五 九十六 九十七 九十八 九十九 一百

THE UNIVERSITY OF CHICAGO PRESS

А. И. КОЗЛОВИЧ, канд. физ.-мат. наук, 1900

and only a small in Irwin County.  
that, as F. R. Baker has been assigned to the work in Washington County.  
over the same Mr. Baker has assigned an operator as a Relief  
of the Rock Springs District, in this County, W. O. Baker has been  
of the Washington County District, Mr. J. and David Baker  
were made for conducting maintenance investigations of steel  
H. M. Pyrite was at the Washington office in 1913 when with

P. T. Simons has been investigating cost and efficiency of drainage improvements in North Carolina, South Carolina and Georgia.

R. D. Marsden completed cement tile investigations in Georgia, South Carolina, North Carolina, and Virginia, and returned to the office May 22.

D. G. Miller has commenced investigations relating to maintenance of drainage ditches in Iowa.

Lewis A. Jones from May 31 to June 4 was engaged in an inspection of drainage pumping plants in Louisiana.

Reports Received:

The Value and Effect of Drainage Works in Reclaiming Agricultural Lands in Oklahoma, by P. T. Simon.

Peat, Turf and Muck.

F. E. Staebner and Chas. Kirschner, in addition to making run-off studies in Florida and Louisiana respectively, have been engaged in re-running muck profiles in those states.

Overflowed Lands.

Geo. R. Boyd conferred with the engineer, attorney and commissioners of the proposed Chickahominy River drainage district, Virginia. This district covers only 6,000 acres of the 15,000 included in the original survey made by engineers of this office in 1911.

Fred F. Shafer on May 26 addressed three meetings of landowners interested in the proposed Meadow River Drainage District, W. Va.

Reports Received:

Clear Boggy River D. D., Atoka, Coal and Pontotoc Counties,

Okla., by D. G. Miller and Dan S. Helmick.

Mud Creek Bottoms, Jackson Co., Ala., by L. A. Jones and G. A. Hart.

Cost of Luxapalilla River Survey, Ala., by L. A. Jones.

Saginaw River Drainage System, Mich., by Geo. R. Boyd and Q. C. Ayres.

Little River and Mill Creek D. D., Cherokee, Cobb and Milton Counties, Ga., by J. V. Phillips.

Sugar Creek D. D. Morgan Co., Ga., by J. V. Phillips.

Olley Creek D. D., Cobb County, Ga., by J. V. Phillips.

of various units of the Department of Defense, including the

collected on at the same time as the other 100. The other 100 were collected on at the same time as the other 100. The other 100 were collected on at the same time as the other 100.

75010988 01000000

The Value and Effect of Business Weeks: A Reconsidering (Hawthorne)

March 25, 1961

... F. E. Steadman and W. A. ... station in Florida and ...  
... have been ...  
... making work ...

Abraham Lincoln

that survey was to be completed in 1971. This district covers only 8,000 acres of the 15,000 included in the 1967 survey. The proposed Chickamauga River drainage district, Virginia, West. R. Boyd conferred with the engineering attorney and committee.

Trud F. Sklar on May 25 addressed three meetings in the proposed Meadow River Drainage District. The first meeting was held at the home of Mr. and Mrs. J. W. Sklar, and the second at the home of Mr. and Mrs. J. W. Sklar. The third meeting was held at the home of Mr. and Mrs. J. W. Sklar.

## 10071955H at 7.000

[illegible]

Reports Transmitted:

Taylor-Williams Levee, Congaree River, Richland Co., S. C., by  
F. G. Eason.  
Walterboro D. D. No. 1, Colleton Co., S. C., by F. G. Eason.  
Kootenai River Bottoms, Idaho, by L. A. Jones and C. E. Ramser.  
Allatoona-Proctor D. D., Cobb Co., Ga., by J. V. Phillips.

Run-off Investigations.

Reports Received:

Run-off from Florida East Coast Drg. Dists., by F. E. Staebner.

RURAL ENGINEERING.

Drawings and specifications for the following work have been completed:

For Bureau of Plant Industry.  
Small Laboratory Building at Chula Vista, California.  
Herdsman's cottage to be erected at Dalhart, Texas.

For Bureau of Chemistry.  
Laboratory equipment to be installed in remodeled building at Arlington.

For Dairy Division.  
Homemade milk cooler.

The bills of materials for the hog houses and the 28 sizes of wooden hoop silos mentioned in the last field letter have been completed.

Drawings for an automatic silage tamper have been completed.

Drawings for a "community house" have been traced and checked.

A steam heating plant is being designed for the "community house".

The tracing of the drawings for the general barn reported last month is partly completed.

A design for a hollow tile feed barn to be erected at Grove City, Pennsylvania, by the George Junior Republic has been completed in pencil and referred to the Dairy Division for approval.

The design for the water system for the Berry School, Rome, Georgia, has been practically completed.

Approved:

Approved: William L. C. Brown, Jr., Richard C., S. C. Jr.  
F. G. Brown.  
Walter Brown, Jr., S. C., by F. G. Brown.  
Walter Brown, Jr., S. C., by L. J. Jones and C. E. Brown.  
Alfred Brown, Jr., S. C., by J. V. Phillips.

Research Investigations.

Research Received:

Research from Florida East Coast Eng. Data, by F. E. Steinhart.

RURAL ENGINEERING.

Drawings and specifications for the following work have been  
placed:

For Bureau of Plant Industry.  
Small Laboratory Building at Santa Fe, California.  
Hardenburg's cottage to be erected at Del Rio, Texas.

For Bureau of Chemistry.  
Laboratory equipment to be installed in remodeled building  
at Arlington.

For Dairy Division.  
Homestead milk station.

The bills of materials for the hog houses and the 22  
cotton seed oiler mentioned in the last field letter have been

Drawings for an automatic silage tender have been completed.

Drawings for a "community house" have been traced and checked.

A steam heating plant is being designed for the "community house".

The tracing of the drawings for the General Dairy report  
has been completed.

Design for a hollow tile shed barn to be erected at Green City,  
Texas, by the General Dairy Division has been completed and  
sent to the Dairy Division for approval.

The design for the water system for the Berry School, Roma,  
Texas, has been practically completed.



Work was started on investigations relating to the construction of buildings for the storage of grains and vegetables; also some investigations relating to equipment necessary for saw mills in France.

The equipment for a small portable gasoline-engine-driven air compressor outfit has been investigated for the purpose of recommendation to the Bureau of Plant Industry for experimental work.

Correspondence and problems relating to the following subjects were handled during the month:

- Power development of streams.
- Ice house design and construction.
- Acetylene and gasoline gas farm lighting plants.
- Hydro-electric plants for farms.
- Water supply, storage and pumping problems.
- Requests relating to gas and alcohol engines.
- Farm house heating systems.
- Tractors and power farming.
- Grain storage and elevating machinery.

#### ADDRESSES, CONFERENCES, INSPECTIONS, ADVICE, EXHIBITS AND LECTURES.

H. C. Wells, S. R. C. was engaged the entire month on special advice and inspection assignments in Brooks, San Patricio, Nueces and Lee Counties

W. A. Crossland, S. H. E. spent six days on a special advice and inspection assignment in Pickens County, Alabama.

V. E. Towles, H. E. with State Highway Engineer Pennell, inspected the roads out of Columbia, South Carolina.

J. H. Dodge, S. R. C. conferred with State Highway Engineer Fallis and with the road officials of Granville County, North Carolina, with reference to maintenance work.

The Secretary of Agriculture has approved a request for the assignment of J. T. Bullen, District Engineer, for a lecture to be delivered between June 26 and 29 before the Southern Agricultural Engineers at Auburn, Alabama.

L. M. Winsor, cooperative agent, spent most of the month of May on a demonstration train on the "Salt Lake Route" delivering lectures on "The Use of Water in Developing a New Farm" and "The Use of Water in Irrigation" at various points in Utah, Nevada, and southern California.

The members of the California force spent a large part of the month of May in giving expert advice to farmers who wished to install irrigation plants.



... ..

...grain storage and elevators are operated under

ADDRESSES, CONFERENCES, INSPECTIONS, SERVICE, EXHIBITS AND LECTURES.

H. O. Wells, H. C. was assigned to the following assignments in Mexico, Central America, and the Caribbean:

W. A. Crossland, E. H. E. spent six days on a special advice and for treatment in Pickens County, Alabama.

7. E. Tolson, W. E. With State Highway Engineer Pennell, investigated roads out of Columbia, South Carolina.

With the road officials of Greenville County, North Carolina, with re-

The Secretary of Agriculture has approved a request for the assignment of J. E. Ballou, District Engineer, for a period of 12 days to assist in the work of the Southern Agricultural Engineers at the University of California, Davis, California.

1. M. Winans, cooperative agent, spent most of the month of May in the area of the "Salt Lake River" delivering lectures on "The Evolution of Man" and "The Use of Water in Irrigation".

...to the fact that the Government has been unable to obtain the necessary information to enable it to make a proper assessment of the situation in the country.